LOADSTAR LETTER #55

The SuperCPU V2 For The 128 & 64 Mode Hits The Streets

By Jeff Jones. Before we get going, what is a SuperCPU and why would you want one? According to CMD, the SuperCPU is an accelerator cartridge that speeds up the operation of your computer. It's a bit less complicated than that. The SuperCPU *is* a computer — a disembodied computer that actually uses your C-64 or C-128 (in either mode) only for its keyboard, video and other input/output with the real world. The SuperCPU accomplishes this by using a combination of high-speed RAM, custom logic and a fast microprocessor, which combine to emulate the functions of similar components located inside your computer.

Using the SuperCPU, programs will run up to 22 times faster on your computer. BASIC programs will seemed compiled, and compiled programs will seem like machine language.

As you get to know your new SuperCPU, you'll also discover that there are some operations that a fast microprocessor alone cannot speed up,

such as disk access. Although your computer can operate much faster, your disk drive isn't capable of matching this speed without some help. With the JiffyDOS Kernal built into the SuperCPU, adding a JiffyDOS drive ROM to your disk drive(s) can also boost disk access by up to 1500%.

In addition to disk access, the 80-column VDC chip used on Commodore 128 computers causes a substantial bottleneck. Writing just a single character to the 80-column screen requires several slow I/O operations, which severely limits the SuperCPU 128's ability to speed up programs that use this mode. In the Programming section of this manual, you'll find some useful information on getting more speed out of programs that operate in this mode, as well as for programs that operate in other modes.

While there are other operations that require the SuperCPU to slow down, most of these aren't noticeable to the user. Overall, your system will operate many times faster than a stock machine, and we're certain you'll appreciate the performance provided by the SuperCPU.

According to CMD, production has been a slow and tedious process. Though the hardware itself had been ready for several weeks, Friday, February 20, 1998, the first dozen or so units were shipped. These units were full production units that were sent out to key individuals who have been requested to report back on its operation in the field. CMD shipped one of the units to my own back door. I ran right to work where there were Commodore 128s (I only have a C-64 at home) and tested it out. Once I got to work, I noticed that operation in 128 mode required a transplant of the C-128's MMU to an adapter board. Since I knew that Fender had been salivating over the 128 accelerator, I didn't want to have it dedicated to my station.

That's right. If you want to use the SuperCPU in the 128 mode, you'll need to crack open your C-128 add an internal adapter and mount your C-128's MMU onto the adapter. This can be scary for those who are squeamish, but anyone who has ever installed a JiffyDOS chip would have no problem transplanting the MMU — despite CMD's standard

apocalyptic warnings about static electricity.

Unlike most Commodore users, LOADSTAR has about four SuperCPUs now, three SuperCPU V1s and now one SuperCPU V2. Right off the bat I noticed that it was faster than the SuperCPU V1, the 64-only accelerator. The little rocket-powered power-up animation was noticeably faster.

I wrote a quick program:

```
ti$="000000":fori=1to20000:next:
printti
```

This program simply set the jiffy clock to zero seconds and then counted from 1 to 20,000. When it was all done, SuperCPU V2 printed 67 while the SuperCPU V1 took over 180 jiffies to do the loop. Each jiffy is $1/60^{th}$ of a second. It turns out that unless the SuperCPU V1 is in an optimization mode, it's running a little over *seven* times faster than normal. I called CMD and discussed this to find that they had done a little tweaking with the emulation software, making the SuperCPU V2 three times faster right out of the box. I optimized the SuperCPU V1 and it actually did the loop in 64 jiffies —22 times faster than normal. Even so optimized, it was slightly slower than the SuperCPU V2 was when it printed the number to the screen — but to its credit not much slower.

I should make one thing perfectly clear here: The SuperCPU V2 is not physically faster than The SuperCPU V1. It merely has better emulation modes and perhaps more optimized behind the scenes firmware. Still, anyone who has previously used a SuperCPU V1 will notice that version 2 is faster unless they have always kept their SuperCPU in proper optimization mode.

When the SuperCPU V2 initializes, it defaults to operating in the *No Optimization All Memory* mode with mirroring of zero page and stack ($0000—$01FF) turned off. This speeds up common processor operations and program execution. While compatibility problems could occur if screen or sprite memory were defined in this range by a program, the possibility is so remote that it is unlikely anyone will experience problems due to the default optimization mode setting. Fender had one problem

— Edstar's untimed cursor blinked so fast that it was invisible. I had to pick an optimization mode that was timed so that he could see the cursor. He created a boot program that always placed Edstar into the proper optimization mode.

While the optimization mode can be changed with a few POKE commands CMD also defined the **CONTROL-←** key combination for easy switching between three of the most useful modes. Each time you toggle the backarrow key, a message will be printed on your display to indicate which mode is currently selected. You may only use this function from BASIC direct mode—it will not operate when programs are running on your computer, nor will it operate if you are in quote mode. You can't print **CONTROL-←** in order to change modes. Most likely you won't want to do this anyway. The SuperCPU seems just fine right out of the box. Optimization modes will likely be a programmer's concern. It is however very good that CMD left the optimization mode programmable in both versions of the SuperCPU instead of picking one not-so-happy medium.

The SuperCPU V2 has more optimization modes than SuperCPU V1 does. It also includes the **CONTROL-←**, which is missing in the SuperCPU V1. In talks with CMD, they mentioned that they are working on a chip upgrade that would allow the same versatility in emulation modes.

I did have some problems with fonts when I tried optimizing my SuperCPU. Not that it didn't work. It's just that once you stop mirroring memory, your on-the-fly alterations to the font may not be seen by the VIC chip. But most programs that don't do this will see no problem.

In the 128 mode, the crawling scroll is finally faster — not blazingly fast like it is in the 64 mode, but comfortably fast. Because of the way the C-128 communicated with the VDC in 80-column mode, the bottleneck is still there, though the bottleneck runs much faster. So scrolling through BASIC programs is nice, but you wouldn't want your programs to constantly update the screen because it will slow the program because the SuperCPU must slow down to communicate with the VDC and then the VDC must carry out the command at its own speed.

Naturally the Write Stuff now acts like WordPerfect does on my Amiga. In fact, it seems faster — especially the spell check.

I've always preferred the 64 to the slightly sluggish 128 mode. Now the 128 mode has met the 90s.

SOFTWARE COMPATIBILITY

Any program that tries to copy the Kernal ROM into RAM and execute it from there will fail. This is because the SuperCPU Kernal is multi-layered, and the mechanism that allows this to work will fail with the Kernal itself switched out. Luckily, this practice is rarely found in programs, since it wastes resources.

The following paragraphs key in on both general and specific examples of what does and does not work, and why.

GAME PROGRAMS

Games are probably the least compatible category of programs to use on an accelerated system. Despite this, we've found that a lot of games are indeed compatible with the SuperCPU's Turbo mode. Many games use 'raster interrupt' programming to time events, and since the VIC chip runs at the same speed it always has, this method works well.

We've also found a few games that aren't compatible with Turbo mode. Generally, games that use custom fastloader routines that bypass the Kernal will fail to load correctly. With respect to these particular types of games, you may be able to switch to Normal speed while loading, then switch back to Turbo mode once the game has started running. If the game goes back to disk for additional modules, though, there's a possibility of failure. Flight Simulator II is a prime example of this. You can load it using Normal speed, then switch to Turbo mode and start flying. But once you cross over into a new area where the program requires data to be loaded in from the disk—crash! (The program, not the plane!)

Many games may run too fast to be playable in Turbo mode, too (Frogger illustrates this). Speed kills. On the other hand, we tried quite a few old BASIC game programs that used to be boringly slow, and suddenly they were kind of fun to play.

You might also find an occasional game that won't work at all with the SuperCPU enabled. These games may use previously undefined opcodes, jump directly into ROM routines that have been altered, or are use timing tricks that are beyond the ability of the SuperCPU to emulate (the latter should be extremely rare). While we haven't found any games that fall into these categories yet, almost certainly they do exist.

PRODUCTIVITY PROGRAMS

Nearly all productivity software should work with the SuperCPU. You may find some that have initial fastloaders that bypass the Kernal routines, but this is pretty uncommon in this type of program. Even so, these programs usually allow you to disable the fastload feature, or you can switch the SuperCPU to Normal for loading and switch back once it's done loading. *Notes: Superbase 128 and Superscript 128 have illegal opcodes in their loaders, and will not load with the SuperCPU enabled. Cadpak 128 and Chartpak 128 will only operate at Normal speed due to odd timing in their custom interrupt routines.*

BASIC PROGRAMS

BASIC programs generally work quite well with the SuperCPU, but you should expect to run into routines where input is too fast, or screens don't display long enough. If you write your own BASIC programs, you can easily make sure that these problems are avoided by writing routines that work well at any speed, or by checking for the presence and speed of a SuperCPU and adjusting the timed routines accordingly (see the *Technical Information* section).

DISK UTILITIES & COPY PROGRAMS

This category covers a wide range of programs, but those which are of most concern from a compatibility standpoint are disk copiers and archivers, such as Maverick or Fast Hack'em. Programs of this type will generally at least require setting the Speed switch to Normal mode, and some may require disabling the SuperCPU altogether. However, more generic file copiers should operate in Turbo mode. However, the more efficient the copier, the less likely you are to see any real performance increases (since all disk access takes place at 1 MHz). *Note: CMD's MCOPY, BCOPY and BCOPY+ require using Normal mode due to timed delay routines used to get the copy process started.*

TERMINAL/BBS PROGRAMS

Relatively few programs in this category have been tested directly by CMD. One area of concern would be custom RS-232 routines, which might be created in a manner that would cause them to be dependent upon the timing of a stock processor. If so, these could fail at high speed. On the other hand, programs that use SwiftLink or Turbo232 interfaces need not perform any RS-232 timing, and are more likely to operate. *Notes: Novaterm author Nick Rossi has upgraded Novaterm 9.6 to take advantage of the SuperCPU's optimization capabilities.*

CP/M

Sorry, but you'll need to disable the SuperCPU when you want to boot CP/M.

First Impressions Of The SuperCPU Version 2

By Todd Elliott. February 21, 1998 shall remain a day that I will remember for quite some time. That was when the coveted SuperCPU v2 came in. With Xacto precision, I cut away the box, tore up the packaging, and proceeded to put things together.

CMD carried 'easy to follow' instructions for installing the MMU SuperAdapter. Following the instructions was quite a breeze, except that there were some jumper clips that I had to 'wedge' in so close to each other. Some sleight of hand dexterity comes real handy here.

Other than that, the SuperCPU v2 is a 'true plug and play' system. As is the case with other CBM and CMD peripherals, I plugged in the SuperCPU v2 and voila! My C-128D awakened to a new lease on life.

Well, now I'm humming away at 20 MHz. What to do? Tried everything but the kitchen sink, of course! Here's a quick sampling of programs that I've tried to throw at the SuperCPU v2 so far:

Burgerwhop 128 - Similar to Burgertime, a 1980's arcade game, but in 80 columns. The performance was something to be desired, even with SuperCPU in 20 MHz. I suspect that relied on an external 60 Hz source for game action.

Blockdrop 128 - A 80 column Tetris clone. Virtually unplayable at 20 MHz mode.

Astra II - 80 column shoot 'em up. Ran in 20 MHz. The gameplay obviously benefited from the speed increase.

MCOPY - I had to use slow mode to utilize the copier — at least when copying to or from my RAMLink.

IPaint Viewer - It rendered pictures fine, and the flicker, unfortunately, is still there. ☹ The speed setting has no effect. I suppose the actual IPaint program would benefit from the speed increase, but I do not own the program.

Zed128.077 - Craig Bruce's text editor runs in 20 MHz. At first there was no discernible difference in speed. I loaded in C=Hacking #5, which is over 800 blocks, and with the SuperCPU disabled, it took 31 seconds. (From a

parallel hookup to a CMD HD.) But with the SuperCPU enabled, the loading only took 23 seconds. Either way, Zed 128, at first glance, continued to operate with no noticeable difference in speed. It is just as fast as ever, even in 1MHz or 20MHz.

Note from Jeff: A SuperCPU-specific version that used the RAMCard RAM would probably operate much faster. The reason for the less than dramatic speed increase was because all of the text resided, banked, in the REU — physically outside of the SuperCPU. This text must be fetched in chunks and then addressed in an indirect fashion.

I tried the search string function on C=Hacking #5 (again over 800 blocks in size), and went to the bottom of the document. I typed in 'xyzzy', and then went back to the top of the document. I then executed a search for the string 'xyzzy,' and at 2MHz mode, Zed took four seconds to go through the entire file before finding it at the bottom. But at 20MHz, the same procedure took less than a second!

Another note from Jeff: Even though the ZED text resided in the REU, it must be copied to the C-128 in order to be searched. The SuperCPU's speed takes

HARDWARE COMPATIBILITY

The SuperCPU will work with a wide variety of hardware add-ons including many of the cartridges intended for use in the Cartridge/Expansion (game) port. One important note: **due to a drawback in Commodore's design, the SuperCPU 64 does not support using the 80-column VDC screen on Commodore 128 computers operating in 64 mode.** The SuperCPU 128 can perform this function, provided the MMU SuperAdapter is installed.

I/O CARTRIDGES

Most cartridges that do not contain ROM should work correctly. Some common examples of this would be the SID Symphony Stereo cartridge and the SwiftLink and Turbo232 modem interface cartridges.

ROM CARTRIDGES

Some ROM cartridges will work with the SuperCPU, including many game and some utility cartridges. When these are detected, the SuperCPU automatically slows down to read from the cartridge's memory (the chips used in these cartridges are much too slow to keep up with the SuperCPU).

Cartridges that use the 'Ultimax' memory map will not work with the SuperCPU. This mode is selected when a cartridge pulls the GAME line low with the EXROM line set high on the cartridge port. Cartridges that use this mode include Action/Replay, Super Snapshot, Partner 64, most IEEE interface cartridges, the Lt. Kernal hard drive host adapter, and some game cartridges. Due to the way these cartridges replace the Kernal, they would render the SuperCPU inoperable even if they were otherwise compatible. To use these cartridges, you'll most likely need to disable the SuperCPU.

RAM EXPANDERS

The SuperCPU is fully compatible with several different RAM expansion devices. RAM devices can provide you with the ability for the fastest possible operation when used with the SuperCPU and compatible software. The following breakdown indicates which devices work with the SuperCPU:

RAMLink - You'll find that the SuperCPU enhances the performance of RAMLink itself, including hard drive access provided through the RAMLink's parallel port. In addition, all of the RAMLink switches still operate just as they normally would without a SuperCPU. RAMLink and a CMD HD combined with a SuperCPU give you the most powerful Commodore system possible.

Commodore & CMD 17xx Series REU's & the SSI 1750 Clone - These DMA devices are fully compatible with the SuperCPU. Programs do not need to slow the SuperCPU down to 1 MHz for REU access, as the SuperCPU itself automatically detects DMA transfers and controls the speed as needed.

GeoRAM & BBGRAM - These devices are compatible with the SuperCPU, and will operate just as they normally do.

RAMDrive - This device is not compatible with the SuperCPU, as it would require rewriting the RD-DOS and incorporating that directly into the SuperCPU.

Quick Brown Boxes - Testing has been done with the Commodore 64 version of QBB (latest release) and it appears to be compatible. There may be some conflicts with JiffyDOS commands, though we haven't experienced any. The 128 version of QBB has not been tested at this time.

USER PORT & SERIAL BUS DEVICES

Typically, all devices that attach to the User Port or Serial Bus should continue to be compatible when using the SuperCPU, provided they are used with compatible software. This includes such devices as Commodore-compatible modems, RS-232 interfaces and geoCable for the User Port, and disk drives, printers and parallel printer interfaces for the serial port.

JiffyDOS Boot Programs Make Specialized Boots Easy

If you have a SuperCPU, you have JiffyDOS, so writing boot programs is easy!

1. Rename your program to something else.
2. Write a small program that makes the proper pokes to change modes as shown in the manual.
3. On a BASIC line enter ↑"programname",dv. Remember that within a BASIC program, you must place the filename in quotes. Include path information if the program is in a distant partition.
4. Save your boot as an easily remembered name in any partition.

over whenever not dealing with an outside device. Since the software spends virtually the same time fetching from the REU, but 20 times less time searching, the grunt work of searching gets done faster despite being based on a secondary storage device. Jeff out.

Bonus points to any Loadstarite who can recognize the string, 'xyzzy.' It is one of many such fabled computing lore that sadly, is forgotten by the Playstation/N64 crowd. (Hint: It is one of the first Easter eggs in a computer game, long before Easter eggs became vogue in recent gaming platforms.)

For a more stringent test, I used ACE (Sorry, I can't remember the version number offhand) to uuencode the 4k-1998.lnx file (283 blocks) and with the SuperCPU disabled, it took 30 seconds to display onscreen, and 33 seconds to transfer the results to disk instead. With the SuperCPU enabled, it only took 15 seconds to display and 22 seconds to transfer the results to disk instead. The source file was on a RAMLink and the target file was on the CMD HD, and operated in C-128 80-column mode.

Little Red Reader 270 - Craig Bruce's MS-DOS file xfer utility runs like a breeze. In loading two files totaling 196Kb, it took 41 seconds with the SuperCPU disabled. With the SuperCPU enabled at 20MHz, the same procedure only took 33 seconds. The transfer was done between a FD-4000 and a RAMLink.

GEOS 128 - I could only boot in slow mode, and reset to activate the RBOOT sequence, in order to get into GEOS 128. Even then, I had to leave it in slow mode if I suspect that there would be disk activity, otherwise, it would hang. I did switch on 20 MHz, while in geoWrite 80 columns, and there was an obvious difference in how the program behaved.

As for **Buddy 64**, I assembled the 410-block monster known as Phantasm & Fantasy Construction Set, and it took 68 seconds in 1 MHz mode. But in 20 MHz, the same assembly only took 8 seconds! :) (The assembly took place in the RAMLink.)

Godot obviously benefited tremendously from the 20 MHz speedup. It took Godot 24 seconds to display a picture in 1 MHz mode. At 20 MHz, it took less than a second to display the same picture.

Last, the second page of my C-64 4K NTSC demo entry simply blew me away with its 'shimmering' effect, at 20 MHz.

The biggest disappointment is **Superbase 128**. According to the manual, Superbase 128 uses an illegal opcode, and the only way you can run the program is to disable the SuperCPU v2. Maybe someone can hunt down the illegal opcode and fix it.

As for raster tricks, I was impressed by the fully interruptible FLI raster routine written by Robin Harbron. I slightly modified it to output eight sprites onscreen! While the same raster effect may be possible on a stock C-64, it would be very difficult, timing-wise, to implement. Truly, the SuperCPU v2 offers a lot of opportunities to explore some serious and wicked raster effects.

Last, I just want to comment on Gaelyne Gasson's portrayal of the SuperCPU as a 'time machine.' (See her article in Commodore World #14.) While undoubtedly the SuperCPU v2 will save me a lot of time, especially when the majority of my activities revolve around programming, I feel that the portrayal misses the mark somewhat.

Back in December 1983, my parents got me a C-64 with a Datasette as a Christmas gift. I remember setting up things together and hooking it up to a TV set (much to my parent's chagrin, no doubt). On that magical moment, the READY prompt lit up. I typed in some sample programs found in the User's Guide, saved them to the Datasette, and I was forever smitten and hooked!

In the following months, I kept

Emulation Modes

The available optimization modes differ, depending on whether your computer is in 40-column or (Commodore 128 only) 80-column display mode. Mirroring memory from the SuperCPU into the computer is necessary to get proper video data for the VIC chip (the 40-column display chip in the Commodore 64 and 128 computers). Since it isn't possible to determine where the video memory will be (programmers can change the location), the SuperCPU mirrors most of the memory by default to avoid major compatibility problems. Mirroring is a slow process, however, and using optimization modes to reduce mirroring speeds memory access. To help you understand when you should use a given mode, here's a brief description of each:

DEFAULT: Mirrors all memory except Zero Page and Stack. May prove incompatible with programs if sprite data or screen memory is moved into these areas, though such programs are extremely rare. A good general operating mode, since it offers good compatibility under all other circumstances, and provides an extra speed boost.

NONE: Mirrors all memory. This mode offers the highest level of compatibility, but at the cost of some speed. Programs will generally run slower in this mode than in the Default mode, though compatibility is increased slightly.

BASIC: Mirrors only the standard screen RAM. Great for BASIC and machine language programs that use the standard default screen memory for a text-only display. Provides an extra speed boost over the Default mode, though a larger number of programs are incompatible with this mode.

FULL: Doesn't mirror any memory. Great for 80-column mode programs since the VIC chip is not used, while the 80-column VDC chip is written to directly by either the Kernal or the program itself.

playing with it, continually exploring its boundaries. I read through the pages of the User's Guide for some wisdom, some revelations and most part, inspiration. It was as if a whole new world opened up and I was just along the ride.

Fast forward to 1998. Now, it has been almost 14 years that I've used the C-64/128. Now, I'm largely a jaded user, been there, done that. Sure, there may be some excitement here and there, but by large, I just work away at it methodically and without thought.

But, when the SuperCPU v2 board came in, I used it with a great sense of uncertainty. What new opcodes are in it? What kind of raster tricks I can do with it? What are its new features? I kept referring to the manual as to explore many of its new features, and used **Jammon**, a 65816-aware monitor by Stephen Judd to begin some initial expeditions within the SuperCPU v2.

In short, I felt that I was that kid back in December 1983, full of uncertainty and smitten with a general sense of excitement and exploration. In that sense, the SuperCPU v2 is not a 'time' machine as described by Gaelyne, but it is a **TIME** machine all by itself! Thank you, CMD, for keeping me fresh and excited at the simple possibilities that the SuperCPU v2 truly offers.

No longer jaded, -Todd Elliott

SuperCPU V2 Users Report From comp.sys.cbm

Posted by Clark Alexander. SuperCPU gives the look and feel of a new computer. By new, I mean different computer. It is compatible with the C-128 and C-64 modes only. In a word it flies. IPaint, SwiftCalc, DataManager, and 128 version of Wordwriter are joys to use. The list of programs that don't work is limited to C64 games that did not follow the rules.

As far as blazing speed, Sega Outrun set a speed record at my home over the weekend. I mean level 5 and the winners circle. First time that ever happened. ☺

Installation of the daughter board required an IC chip puller and anti-static wristband. Both were purchased from Radio Shack for about $14. Total process took 45 minutes only because I didn't have a clue. Never looked inside a computer before. Did not want to void

manufacturer warranty.

Note from Jeff: Fender didn't use an IC puller. He used a small flat screwdriver, and he totally ignored the warning about the anti static wrist strap. Before I handle a chip, I touch something grounded to discharge any static buildup I might have. We jaded computer users do things like that — but like CMD we COA and would never suggest that you do what we do — even though we never lost a patient breaking the rules. So just ignore this blab and follow your manufacturer's instructions.

To summarize, few incompatibilities or annoyances so far. I have experienced a high level of compatibility with existing software. The C-128 SuperCPU was worth the wait, I would recommend it to anyone who wants a blazingly fast, friendly and reliable computer.

Arcane Studios

By Robin Harbron. Arcane Studios is a new company supporting the C64 - but the person running the company isn't new to the scene. Jon Mines, President of Arcane Studios, previously of Threshold Productions and the C64 division of Arkanix Labs is starting up this company, and hoping to turn over a new leaf.

Arkanix Labs had recently announced their decision to no longer support the C64/128, citing poor sales and a bleak future as the main reasons for leaving. In further talks with Mines, more details have come out: "Arkanix Labs left because I let (my partner) convince me, at a bad time, that the C64/C128 was over commercially".

Mines has since had a change of heart about the C64, and has decided to pursue new business opportunities in the Commodore 8-bit market - this time flying solo. "My new venture, all handled internally by me, no partners, etc. will be called Arcane Studios," said Mines. Some further plans concerning an Internet presence were mentioned as well - arcanestudios.com may soon be in existence.

Immediate plans were also announced: A new game entitled "Stroke World" is available for $12; "Driven-By-Mail" on 3.5" only for $3, including 2 issues and all demos mentioned in the release list; a public domain software library - approximately 14MB available; further development on Hyper Cars 2, Lazer Duel 2 and Crimson

Twilight; and importing a new disk magazine from Europe.

Mines also had this to say: "Something I want to make extremely clear - if anybody has ever ordered from TP or AL in the past and didn't receive their products - PLEASE contact me! I will fill the order ASAP."

For orders and inquiries:

*Arcane Studios
17730 15th Ave NE Suite 229
Shoreline, WA 98155
Email: tpinfo@eskimo.com (temporary)
Phone: 206 706 2231 (voicemail, checked 3 times a day, specify when you would like your call returned)*

Stroke World by Protovision

By Robin Harbron. The first thing I thought when I received this game for review was "Where did they get the name from?" - then immediately I
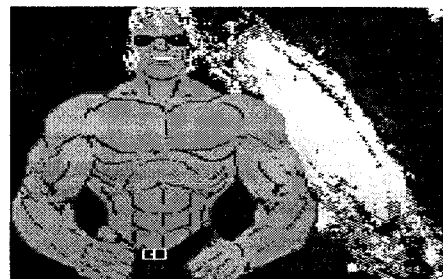
figured I was probably better off not knowing. On to the review...

The game ships on a 3.5" disk by default or 5.25" if you specify. I immediately installed it on my FD-2000, in its own directory, and had no problems there. I then proceeded to boot up the program - the screen displayed a message stating it detected my SuperCPU + SuperRAM card, and proceeded to load the entire game disk into SuperRAM memory - this took nearly two minutes, even on my fairly speedy FD-2000, but the disk drive wasn't needed again for all 20+ levels contained in the game - all the levels were very quickly retrieved from RAM from then on. The game also works without the SuperCPU, but the disk drive is accessed periodically between levels. The game does not make any use of a REU.

We are treated to a fairly good introductory sequence, where the hero of the game, Mr. Universum has a
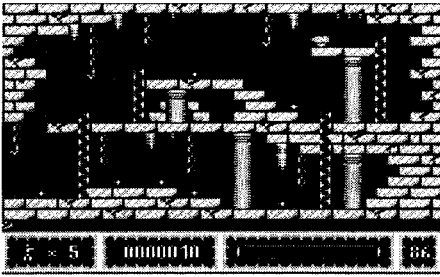
discussion with a tiny green alien. The alien then proceeds to steal Mr. U's huge muscles - and Mr. Universum shrinks down into a tiny white stickman sprite. Throughout this game we are treated to some excellent music - I counted at least 7 original songs. The only downside to the presentation in this game is the poor English - they should hire Jeff as their editor.

You're now in control of this little muscle-less Mr. U, and your goal is to retrieve your muscles. There are 20 levels in all, split into 4 groups of 5. Each group of levels has a particular graphical style, and a unique song. At the end of each group of levels, a password is displayed that can be entered at the title screen to avoid having to replay all the levels.

The gameplay itself is pretty
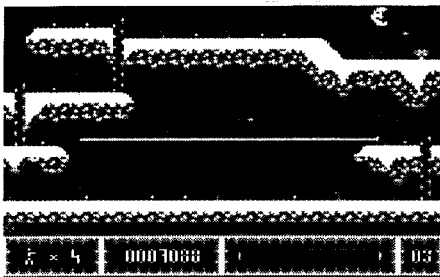
simple - each level is a single, highly detailed screen of standard platform fare - there are ladders and ropes to climb across. The goal is to destroy all the creatures on screen, usually around 4 or 5 of them, and then make your way to the signpost located somewhere on the screen.

It was fairly easy to make my way through most of the levels - a few of the later levels got somewhat tricky, but overall the game was fairly easy to complete. The last level is a special treat - I won't let you in on more, as it was a real delight to see something so different from the rest of the game.

Once all the levels are complete, we are treated to an elaborate end-of-game sequence - again, I won't ruin it, but a word of caution: a bit of the

language in the outro is somewhat offensive, so use caution with it. I was disappointed to find that at the end of the game - it blemishes the otherwise very professional way this game is presented.

Protovision makes reference to a SuperCPU-only game they're working on, called Metal Dust - I'm eagerly looking forward to it, based on the enjoyable few evenings I had with Stroke World.

Stroke World is being distributed in North America by Arcane Studios for $12 - specify 3.5" or 5.25" disk format when ordering:

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Email: Take it Seriously

By Gaelyne R. Gasson. On my desk is a printout of an article by Dan Goodin for NEWS.COM,

(http://www.news.com)

with the headline: "Email is still dangerous in business". The gist of it is that many companies have never treated Email as serious as they do their other forms of communications. Recently an Email Lawrence Lessig sent to a Netscape employee surfaced and threatened his appointment as a court advisor on the Microsoft vs. the Dept of Justice case. One Email message almost tipped the scales of justice in this case,

and whether it should have or not, isn't the point. The point is that many people don't treat Email as serious business, failing to see that it can affect your job, reputation and other areas of your life, as well.

One of the things that I found surprising from the article about the Microsoft vs. Department Of Justice case is that some big businesses have a policy of periodically discarding unnecessary documents so legal adversaries won't be able to get their hands on incriminating evidence. Wait a minute! Mom and Apple Pie and all that... some of us don't HAVE any "incriminating evidence", and keep our mail just to prove how boring and mundane we really are. I'd never put in an Email message what I wouldn't put on paper. As simple as that. Personally, I'd rather be able to PROVE an allegation as false, than have no records at all.

'Compleat Loadstar-ites' that read Fender's rumblings on the topic know that Fender dismisses Email with a wave of his hand, and feels that it has all the charm (or less) of a handwritten memo. Luckily for businesses that work with LOADSTAR, Judi does take it seriously. VideoCam Services has had a very pleasant on-going relationship with LOADSTAR, and we've been able to fill book orders received via Email faster than waiting for them to arrive through postal mail. If I didn't take electronic mail seriously, I would have skipped the trip to Australia to meet my husband Rod.

It's important, alright. ☺

What to Keep, What to Get Rid of— Mail that's neither social nor work related can be deleted after 10 days. If you haven't needed it in the last 10 days, you can probably safely get rid of it. Naturally, SPAM is deleted at the source. Don't even bother downloading it. Email relating to business should be printed and stored offline with the rest of your business records.

Sometimes it's a hard line to draw, and there are times when even social Email is important to keep. A long description of my grandfather's farm, sent to a Commodore fan in Texas was saved and later sent to my father in a letter. My Dad shares Fender's attitudes about Email, but still enjoyed what I'd written. If you find that you're comfortable writing "social" Email, saving the best bits and using it later in other letters or even in a family newsletter can save you time later. There's nothing wrong with recycling your own words. I don't keep all my social mail; a lot of it is deleted after 10 days. I do keep mail sent or received from my family though. I may not have a stack of letters from my kids to embarrass them when they're older, but I do have their Email. Some of it's priceless even if it did start out in "electronic" format.

There will be times when you don't keep something and later you wish you had, but that doesn't mean you have to be an electronic pack rat. Since David Schmoll's death, I've not only mourned the loss of a good friend, but I also mourned the fact I tend to only keep family related social Email. David and I shared almost daily Email for several years, and I would have found comfort in being able to read our exchanges, but they're gone, and can never be replaced.

The Art Of Email — Just as there's an art to Letter writing, there's an art to Email, and some basic etiquette points to remember:

Email Is Not A Memo Or 'Temporary' — It shouldn't be treated as you would an office memo. You might delete (or not keep at all) the mail you send out, but the person receiving it might not.

Email isn't the same as verbal communication — It's a lot harder to "take back" something you've said in

Email than something you've said aloud (and this applies to newsgroups and messages on BBBs as well). Try your best to never type something you would die of embarrassment from later. If it would bother you that your mother/spouse/boss could read it, don't type it.

Respect Privacy — If you have an Email conversation with someone and want to share it with another party, ask permission of the other person first, and respect their wishes.

Don't Panic If You Send An Email To Someone And They Don't Answer Immediately — There are many systems that only connect to the Internet once or twice a day to pick up and send out mail, so there can be delays, and some people only check mail once a week or so. People who receive a lot of Email don't always have time to answer all they receive in a day. I set aside time each day to answer mail, but I've come to learn that it *can* and sometimes *must* wait (even I have to work once in a while). Recently Jim Brain told me he had received some nasty mail because he wasn't answering Email. His wife has been in hospital. We don't always know the full story why someone doesn't reply, and it can be really disheartening to receive nasty mail in situations like this. <u>*PLEASE THINK BEFORE YOU TYPE!*</u>

Some People Aren't Available For Social Email — As much as you'd enjoy a nice Email chat with some folks, sometimes it just isn't possible. Doug Cotton, Jeff Jones and Maurice Randall are a few Commodore people that do answer mail (probably on a priority-basis), but they have serious work to do, so we shouldn't be trying to chat with them in Email no matter how tempting it might be. This shouldn't discourage us from sending them important news or serious questions though.

Do Quote / Don't Quote (Take your pick) — Quoting when replying to Email helps keep the conversation focused and provides a more conversational type atmosphere. Also, if you're having a disagreement with someone, quoting is a good idea - it helps to keep us from going off on a tangent.

Some people treat Email like a letter, and don't quote anything the

other person has written, but respond to it as they would a written letter. This "technique" has a few things going for it. If someone sends you long-winded Email that you don't feel up to answering in entirety, you can answer with a non-quoted reply and cut down the amount of stuff to wade through. My sister uses this method all the time, and I wish she'd figure out that it's more like sharing a conversation if she uses quotes and responds to them. Then again, I can be guilty of rambling, so maybe she's better off with her method.

Don't Send "Personal SPAM" — Sending jokes or other humorous items to 150 people in one Email may as well be SPAM. I'm not humor impaired, but give me a chance to find it on the Net for myself. It's impersonal to receive something you've sent to hundreds of other people. If it's the kind of thing you think I should see, let me know where I can find it, or send it to me individually. If you enjoy sharing jokes in Email, a nicer way to go about it is to join a suitable mail list and share what you've found with others who want to receive them. Check out **Reference.com** at

http://www.reference.com

and do a search for "jokes" in "mailing lists". You'll be amazed at the number of joke lists you'll find.

Don't Carbon Copy Your Messages To Others Unless You Know The Other Party Is Interested — One fellow sends me mail and sends a carbon copy to another Commodore user who sometimes becomes annoyed to receive mail on a topic that he wasn't involved or interested in. I'm often puzzled by it too.

Don't Carbon Copy Your Argument To Hundreds Of Other People — If you get into an argument with someone, it's generally a personal thing between you and the other person involved. Adding in LOADSTAR, CMD, VideoCam Services or the comp.sys.cbm newsgroup into the fray isn't going to help solve the problem, but adds to everyone's slush pile.

Don't Take Your Frustration Out In Email — Responding to SPAM with a nasty message may make you feel better, but the only good it does is give the SPAMmer another reason to send

you junk mail.

Email is extremely useful for keeping in contact with friends and relatives, working out the bugs in programs (almost all of the programs I beta test, I receive through Email), and for business contacts. It should be treated as a serious tool. Hopefully the tips above will help you to use Email wisely.

Gaelyne Gasson is the author of "The Internet for Commodore C64/128 Users" and can be found keeping her home page tidy at http://videocam.net.au/~gaelyne or through Email: gaelyne@videocam.net.au

SPEAKING OF EMAIL...
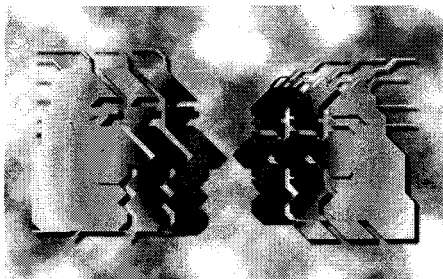
LETTERS TO THE EDITOR

PC Bigotry Is Not PC

Your last issue had an article, apparently anonymous, sent in concerning our vote as to whether or not to continue allowing a PC SIG group to exist on its own merit. It went through the first trial year doing no damage to our LUCKY group whatsoever. Most of the PC users are friends of mine and are faithful Commodore users along with their PCs. It certainly should come as no surprise that this Commodore right or left winger was ashamed to sign their name to their own low-life letter.

The article in LOADSTAR began thus: "From LUCKY Report, Louisville, KY. To ALL It May Concern: Lucky Commodore Computer Club in Louisville, KY has hereby on this date, January 13, 1998, denounced and rejected and voted out our IBM SIG Group . . ."

I object strenuously to this letter. The first falsehood of this ugly letter is that it came from LUCKY Report. Dale would not permit this trash to be printed. As a member of LUCKY, I was one who voted to maintain the PC SIG group. There was at least one other Commodore user, as I, (who possesses NO PC computer) who voted to sustain this SIG group. They paid their

Commodore dues, and maintained their own SIG treasury. In no way were they a hindrance or burden to our Commodore LUCKY group. The vote proposed in no way was for the purpose of "denouncing" IBM-PC users. It simply was to decide if they should continue to co-exist in our Club as a SIG group. It is a known fact that some, I do not know how many, of the PC members, voted themselves to drop the group. They felt it would be better to form their own group independent of LUCKY rather than face constant insults and intimidation from a few hateful Commodore LUCKY Club members. It should be noted had they [PC users] all voted, plus (at least) two Commodore [non-PC users as myself], the vote would have been a victory for keeping their SIG group active. The PC users determined the outcome of the vote oddly enough.

So, for the record, let it be known that the so-called 7 clone votes were not all "clones" (slang pertaining to PC users). That statement is another outright lie.

It is a false implication to say that the IBM SIG group was a "thorn in our side". This was not the case. Only a couple of hate-PCers felt strongly this way. The PC users were accused of not contributing anything to the group. This, too, is an outright lie. Our former President was a PC user, and a very good President, as was our former Vice President. Our former recording secretary was a PC user and active in the group as an officer. At least two others were also quite active and supportive in many ways for the LUCKY Commodore Club. Their walking out is our loss and much to our dismay. A few have confided to me they may return when the Club "settles down" and one already has rejoined I am happy to state.

The tone of this document was negative and an insult to IBM-PC users. Commodore users for the most part, many of which have PCs, do not wage a continual war against PC users! We are proud of our Commodores and rightly so. We have something much more constructive to do than waste our time hating PC-IBM users. I know several PC users who are devoted to both Commodore Computers and their PCs. They use each for distinct purposes. I intend to remain friends with my PC users, even though I would not be found dead in possession of an IBM or PC myself. I'd come back and haunt the person who snuck one in with my carcass. My brother is a PC user. He went PC because he deplored the poor support CBM gave, at the time, to Commodore users. Now we have such greats as LOADSTAR and Creative Micro Designs, Inc. supporting us, along with many, many others, too many to list here. Let there be peace on the waters, please. Be patient, brethren, soon we will be standing tall with Big Blue and rubbing shoulders with them even-Steven once again. Keep the faith!

Rev. Willis C. Patten
wcpat@iglou.com http://www.ocslink.com/~andrews/geospub.htm GEOS Publication Published by Enhancer Publications.

Home Profile Page:
http://www.iglou.com/profile/view.cgi/wcpat

Jeff: I have to admit that it is indeed unsavory to look down on a person because of the type of computer they use. Such notions reside near the core of human iniquity and bigotry.

I'm sure that the anonymous person who inserted the slip of paper wouldn't consider himself or herself a bad person, and I don't either. It was simply a regrettable act. The person

To All it May Concern:

LUCKY Commodore computer club in Louisville Kentucky has hereby on this date Jan 13, 1998, denounced and rejected and voted out our IBM Sig group.

The Go/Stay vote was: 24 Go. 7 Stay. (The 7 were clone members)

The IBM Sig has been a thorn in our side for a whole year! They turned out in-force to overwhelm us. Most of them never attended our regular meetings all year. They never contributed anything to our club, to the contrary, they detracted from it. What they wanted was to take over and get rid of the C= people!
We have nothing against MS DOS machines, just pushy people!

Long Live the Commodore machines!

The note above was surreptitiously inserted into LOADSTAR's copy of the Lucky Newsletter.

stretched the truth, knew it, and this is why they remained anonymous.

One of my close electronic buddies resides in California, a digital photographer like myself. He uses a Mac, and I have to admit that I dislike Macs, mainly because so many people swallow the Apple hype line that programs somehow run better on a Mac. The notion that the Adobe team which created Photoshop for the Mac can't program it as well for a PC is absurd — especially since we know they have access to all the source. I deal with many service bureaus and printers who use Macs and they tell me that my work is good, but I should get a Mac.

Well one day I mentioned to my MAC buddy that he should get a real computer and it set him off. He blasted the PC, the Commodore, the Amiga, and became angry with me. I apologized and realized that I had become the monster that I despise — the grinning PC user who stops in my office and gawks at my C-64/128 setup and incredulously explodes, "How can you use those computers?" To people like this I just say, "Can we just — *get along?*"

SuperIIGS?

Dear Jeff,

A friend told me that he thought the CMD 128 accelerator incorporates a chip from the Apple II GS. Do you know anything about this? He said that, if so, he thought Apple software might be fairly easily modified to work on the 128.

Charlie Duncan

Jeff: Not so. While the machines do sport the same type of chip, the architecture around those chips is different. Pure machine language will indeed run without a hitch the same on both machines — as long as you don't try any needless frills like printing anything to the screen, reading the keyboard, mouse, joystick, making any Kernal calls, and God forbid, don't even think about disk access.

Very bland BASIC will run on any computer, but any usable program is computer-specific — except Java programs. Think of it like this: A C-64 and a C-128 program sport the same chip. A C-64 can't run C-128 software and visa versa — not unless the programmer takes great pains to use common commands.

Free Novaterm Advice

Hi, Jeff and Fender,

Once again I want to thank Jeff for the suggestion about Genie On-line Services in the LOADSTAR Forum in Issue #156. I joined Genie in July 1997 and I haven't been disappointed yet! I would have never known that I could get on-line with this old Commie if I wouldn't have read LOADSTAR Forum.

I started out with an old SHAREDATA 300C modem, which is about the same as the old Commodore 1650, but, after a couple of months, I discovered that 300 baud is painfully slow — especially when downloading and uploading files! I ordered an APROTEK MINIMODEM-C24 from CMD and it took a while for it to arrive due to the UPS strike, but it finally got here! I'm using Nick Rossi's NOVATERM 9.6 (patch C) which was revised as of July 1997. This version has a little more buffer space available than the previous version of NOVATERM 9.6. That's important to me because with 2400 baud on Genie, the e-mail scrolls so fast that I can't read it like I could at 300 baud. I always open the buffer, give the day's date as a file name, and "capture" the e-mail so that I can read it off-line at my own pace.

With NOVATERM 9.6, I can also save the e-mail to a disk. NOVATERM 9.6 also has an excellent text editor that's comparable to Busy Bee's "THE WRITE STUFF". The NOVATERM text editor has a few advantages and a few drawbacks when comparing to THE WRITE STUFF, so I try to use the best of both programs.

Nick Rossi, the creator of NOVATERM 9.6, recently e-mailed me and informed me about a bug in the software. According to the user's manual, CTRL-S should stop on-line scrolling and CTRL-Q should continue scrolling.

If you are using the standard-80 terminal emulation and word/parity set to 8 data bits, no parity, 1 stop bit, the CTRL-S and CTRL-Q won't work and the user won't be able to access the Internet. Nick suggested using the ANSI emulation with word/parity set to

7 data bits, even parity, and one stop bit. With these settings, CTRL-S and CTRL-Q function the way they should, but the chat mode is disabled unless the standard-80 terminal emulation us used. Genie On-line Services recommends using the VT-102 terminal emulation with 7E1 word/parity for everything except CHAT.

With NOVATERM 9.6, you must use standard 80 (or standard 40 if you don't like the bitmapped 80 columns on a 40 column screen) if you're going to use the conference or chat mode.

If you are going to use the APROTEK MINIMODEM-C24 with NOVATERM 9.6, the modem will not initialize automatically like most other Hayes compatible modems do. Simply select terminal mode, press CMDR-I, and wait for the carrier detect light on the modem to go off. Then press CMDR-Z to return to the main menu.

If you plan to use NOVATERM 9.6 for file transfers or "text file to modem" on the disk utilities, select 1 second line pacing to speed up the file transfer. Zero seconds will mess up the transfer and the default 2-second pacing is a little bit too slow.

Howard Halasz, Houston, TX E-mail: h.halasz@genie.com or h.halasz@bbs.hal-pc.org

Free Stuff!

Ten years of unbridled collecting must go. I plan to stay in the C64/128 realm but must clear my study of C64 magazines, games, books and utilities. Lots of reference manuals. All items free to good home, but postage may be asked for heavier items. Please *don't* bother to ask for LOADSTAR disks, Maverick, TWS, Novaterm, or GEOS 2.0. Contact jjgosse@peaknet.net or Jerry Gossett, 4000 S. Park, Belleville, IL 62226.

The Great LOADSTAR Demo Controversy

In response to LOADSTAR's publishing of the ROOM demo in the recent 4K demo contest, I received the following Email. I'll keep the sender's name secret since he's a cool guy. Dear Jeff,

It would be extremely cool if, for the next 4k competition, LOADSTAR can become an active supporter (i.e.

some sort of prizes) of this event.

I think more people appreciate having their work spread, even in a commercial medium, than those who do not. Still, it does give some demo sceners the impression that LOADSTAR taps the scene for its own *commercial* benefit, and apart from including demoscene products on your media, there hasn't seemed to be a clear or public acknowledgement of support for the scene and its participants by LOADSTAR.

Thanks, your help would be much appreciated!

Jeff: LOADSTAR has made offers in the past to support demo competitions.

We've published demos off and on for years. It wasn't until last year that we started receiving mail from people, including, Robin Harbron, saying that it seemed somehow wrong for LOADSTAR to make money off of demos.

Well LOADSTAR has never built a nestegg on demos. The way it usually happens is we pack some text or a program in order to squeeze a program on a 1541 side of an issue, and then end up with too much extra space. Rather than leave blocks free, we might find a demo that fits just right on the disk.

I find it odd that an ISP can charge people to download free things, and all sorts of people sell whole lines of disksfulla PD — but somehow LOADSTAR has to be left out of that market? Frankly I think LOADSTAR should place every single PD program in the world on a disk and sell them as PD collections like many companies before us did. Most of these companies have gone by the wayside — which shows how much money there is in selling free things. But most of our readers don't have modems, and those that do simply aren't online. Whenever we publish a wacky demo, we get great feedback. Still it's rare that we publish them. The reason we're so hesitant to do so is because there is a high risk that our readers already have this free stuff or feel that if they wanted it, they could somehow get it totally free. Anyone who receives LOADSTAR regularly can see that we don't make money off of PD.

Our Star Extra disks are selling "alright," but I probably make more money putting them together from my outrageous Commodore programmer's salary than J&F Publishing makes selling a hundred or so disks in a year.

My main motivation for compartmentalizing the shareware and freeware from the net into Star Extra disks was to keep LOADSTAR readers excited about owning their computers. There indeed is a "whole nother" world out there in PD. LOADSTAR makes its fortune in new software though.

Years ago I announced publicly that if demosceners wanted to make money, they could write non-profane LOADSTAR-oriented demos and make $100 per demo for as long as they could write great demos. No one even responded. Who else would offer to pay for a demo?

Navigating Native Partitions

Um, I read the part in "The Compleat Programmer" which discusses universal directory access and have actually used it with great success recently in a personal programming project. Thanks for that juicy bit of instruction, however, as much as you loathe accessing directories with direct disk access instructions, I find that your method of loading the directory as a file via the DOS is useless if one needs to write new data over existing data within the directory sectors. Without direct disk access, how does one determine where the first directory sector is physically located so that one may know where to write the new data? If all you're doing is reading the directory, yeah, who cares where it's located?

I have a program which automatically detects 1541, 1571, 1581 and CMD Native Mode root directories and adjusts itself accordingly to accommodate each. However, I do not know how to glean from the disk the location of the first directory sector within a CMD Native Mode subdirectory. This is not covered in my copy of "The Compleat Programmer" because you have a commandment never to use direct disk access to determine disk types. I understand very well your reasons for frowning upon that practice, however, until I can figure out a way for my program to know *where* to write new data into the

directory of a native mode subdirectory, I will simply have to forego support for them entirely - which is very sad to me.

I wrote a physical letter to you and Fender a few months back and never got a reply. However, when I Emailed you today, I got a reply today. So how

> "Actually, I don't have anything against direct access routines. I just have something against programs that absolutely crash or refuse to work at all unless you're lucky enough to have the same drive the author has."
> ..Jeff Jones

is it that Email in your offices is considered to be no better than a memo?

Myke

Jeff: Sorry about not mailing you back. I answer Email at home at night, not at the office.

The answer you're looking for is indeed in The Compleat Programmer. When you open a directory with OPEN2,dv,2,"$:", the first character you get tells you the type of drive you're on.

DECIMAL	ASCII	DRIVE TYPE	T/S
65	"A"	1541/71	18,0
68	"D"	1581	40,0
72	"H"	HD/RAMLink	1,1
72	"H"	CMD SUBDIR T/S is pointed to in bytes 34 and 35	

```
Are you already in a
subdirectory?

100 open2,dv,2,"$:"
110 fori=2to33:get#2,a$:next
The next byte you get will be
the thirty-fourth byte
120 a=0:fori=34to38:get#2,a$
130 a=a+asc(chr$(a$)+chr$(0))
140 next
```

At this point if A is not equal to zero, you're in a subdirectory — if you're in a CMD native mode partition.
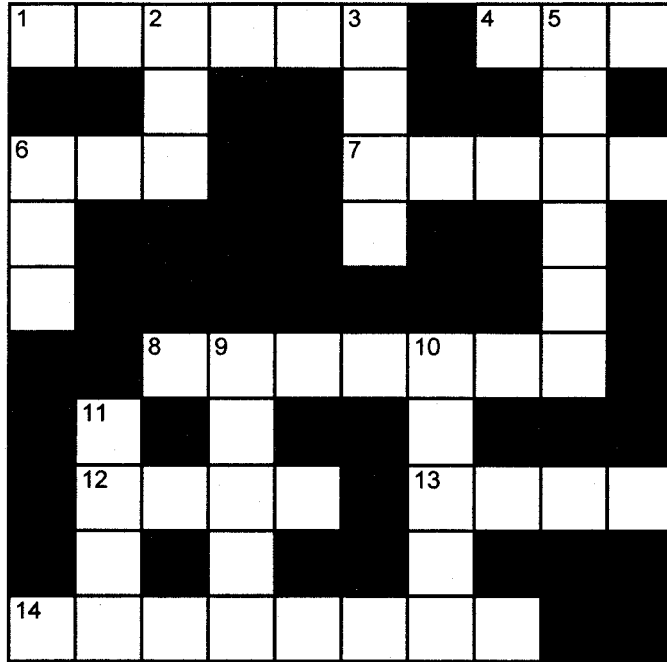
A CBM-BIASED PUZZLE

Across

1 53280 is the location of the _____ color (6)

4 The brains of any computer (3)

6 Cool computer company (3)

7 Freak Magnetic _____ (5)

8 A man slightly ahead of his time (7)

12 Large scale, but not very large (4)

13 Loadstar's favorite text color (4)

14 The most useful jackass in the world (8)

Down

2 Poke 53281,2 and the screen turns _____ (3)

3 These lite chips run faster because they have less instructions (4)

5 CTRL-4 changes the cursor _____ (6)

6 Inept computer company (3)

9 Girlfriend (5)

10 A standard of code interchange (5)

11 6 is the color _____ (4)

IN THE BEGINNING....

God created heaven and the earth. Quickly he was faced with a class action suit for failure to file an environmental impact statement. He was granted a temporary permit for the project, but was stymied with the cease and desist order for the earthly part.

Appearing at the hearing, God was asked why he began his earthly project in the first place. He replied that he just liked to be creative. Then God said, "Let there be light", and immediately the officials demanded to know how the light would be made. Would there be strip mining? What about thermal pollution? God explained that the light would come from a huge ball of fire. God was granted provisional permission to make light, assuming that no smoke would result from the ball of fire; that he would obtain a building permit; and to conserve energy, would have the light out half the time. God agreed and said he would call the light "Day" and the darkness "Night".

Officials replied that they were not interested in semantics.

God said, "Let the earth bring forth green herb and such as many as there are seed". The EPA agreed so long as native seed was used.

Then God said, "Let waters bring forth creeping creatures having life; and the fowl that may fly over the earth". Officials pointed out this would require approval from the Department of Game coordinated with the Heavenly Wildlife Federation and the Audubongelic Society.

Everything was O.K. until God said he wanted to complete the project in six days. Officials said it would take at least 200 days to review the application and impact statement. After that there would be a public hearing. Then there would be 10-12 months before.... It was at this point that God created Hell....
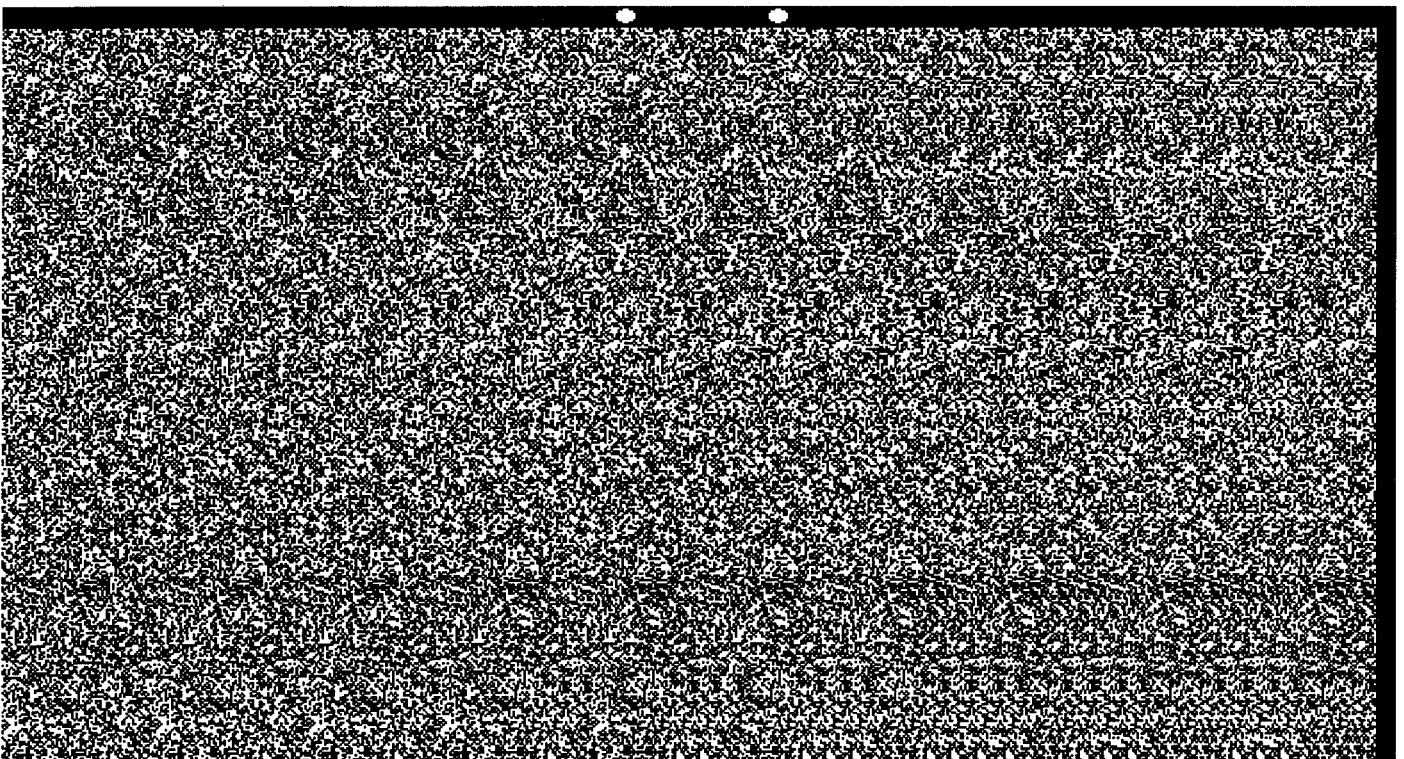
Spokes - To view, cross your eyes until the two dots at the top center become three dots. Move closer or farther to undo any blurriness. In a few seconds a 3D effect will leap out at you.

(Continued from page 10)

You should check for that first.

There's a reason why you must open a directory with a secondary address of zero for a directory listing. Zero is a signal for the DOS to format the information in the form of a BASIC program. Secondary addresses other than zero will open the directory as a file, starting at the first directory block, any drive. The first two bytes point to the next block of the directory. You can't see these when you open "$" as a file. You can only see 254 bytes of each sector. But directory links are unimportant. As you read, the drive will automatically jump to the correct sectors in the correct order. The first byte you get will tell you the drive type: Finding the TS of a subdirectory is as simple as getting its info from the directory as described previously.

Actually, I don't have anything against direct access routines. I just have something against programs that absolutely crash or refuse to work at all unless you're lucky enough to have the same drive the author has.

Myke: Thank you, Jeff, for taking the time to write such a complete response.

Jeff: Er, actually I just pasted it from The Compleat Programmer Available from J&F Publishing for $20.

Myke: I remember everything you just wrote from when I read the related article in "The Compleat Programmer". However, your reply does not address my specific question - as far as I can tell, at least.

When my program has determined that it indeed is working from within a native mode subdirectory, how can it then determine where the first directory T/S is located so that it can *write* to it and not just read from it?

For example, say I wanted to write a program that changes the name of a disk directory directly without having to format the directory. "Inside Commodore DOS" has an example program in it which uses direct disk access commands to read in the first $ sector into one of four drive RAM buffers. A new diskname is then written to RAM, replacing the old diskname. The whole sector is then written back from RAM to the disk. How could such a program be written - using your non-direct directory access method - so that

"disknames" for native mode subdirectories could also be changed without having to format them? Take my word for it that this is not what I'm trying to do, but it does illustrate my point well nonetheless.

In other words, how would the program know where to *write* the new diskname? Without the T/S bytes having first been read, I cannot see how it could know where to write it. (Well, the DOS read the first two bytes but the program doesn't.)

It would be nice to have a good, clear, thorough explanation available somewhere that tells how native mode directories and subdirectories do their things with regard to directory track placements.

Again, thanks.
Myke

Jeff: The answer was right there. Let's look at that chart again. Note the emboldened text:

DECIMAL	ASCII	DRIVE TYPE	T/S
65	"A"	1541/71	18,0
68	"D"	1581	40,0
72	"H"	HD/RAMLink	1,1
72	"H"	**CMD SUBDIR T/S is pointed to in bytes 34 and 35**	

Just get the data from its own header. You might also try the r-h command:

    open15,dv,15, "r-h:diskname"

CMD devices support this command, and will rename headers without formatting the disk.

TWS & CMD Subdirectories

Hello Nice Lady & Good Guys,

My primary equipment set up is: 128D, FD-2000 (2), Thompson RGB monitor, External 1571 NX-1000C.

Made several attempts to set up my correspondence file on one disk, instead of 7 (1 for each different area of interest), using subdirectories on the FD-2000 through TWS. Even champion procrastinators produce correspondence. I do not want partitions, would rather take advantage of subdirectory common storage factor. I cannot tell you what I have done, and have not done, I tried so many different things and read so many different

articles my mind is - someplace. Maybe it is not possible to use subdirectories with TWS, if so please tell me how idiotic I have been and how much time I have wasted. I think I read someplace, sometime something written by JLJ on this subject can't remember where, when, etc.

Jeff: First you must create a subdirectory. You can do this from within TWS with CTRL-↑

At the @ prompt type

md:directory name

You can move to your subdirectory with:

cd:directory name

Or you can save your file from the root without going to the subdirectory by giving the filename a pathname:

//loadstar/:-jeff

Saving a TWS file with this name saves the file, "-jeff" in the subdirectory, "loadstar."
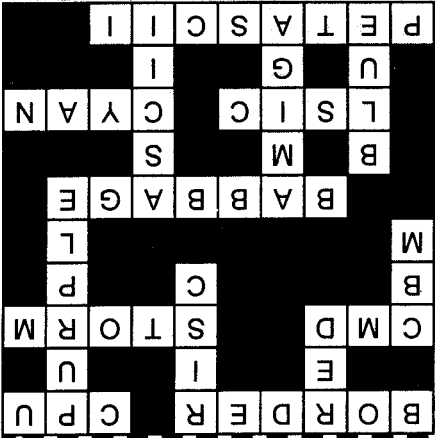
If you're confused about where to place the colon in a pathname, just remember that it always comes before the filename. In order for the TWS file menu to work, you must CD to the actual directory.

Thomas: Enclosed is a picture of my system. By the way all computers and drives are JiffyDOSed. Also modified all drives, except FD-2000s with device number switches accessible at the front. The FD-2000s are always used as 8 & 9. The 128D modifications include reset (computer & drive), devise selection, JiffyDOS en/disable switches and a switch to turn off the internal 1571. One 64 has a reset switch installed, others will if I ever use them. The 1541s have been further modified to prevent loss of alignment. Once the modification was made, the alignment was set with a quite expensive program and an oscilloscope, repeated abuse (head banging) for several years has not knocked them out. Check them with the scope occasionally - always perfect.
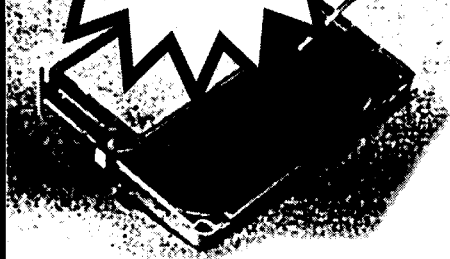The best
Thomas F Houlihan

The 128D keyboard is on a movable shelf, built by me. Note the blue switch box under the doors, these are power switches for all devices except the monitor. A power strip is under the right side of desk top, the monitor is energized directly from it. Switch box gets power from that. This allows me to switch on/off all devices without contorting, stretching and pulling muscles to reach rear mounted The desk on the right is primary. switches. The 128D also has switches & bush button on front to allow J-Dos en/disable, system reset, internal 1571 reset, drive on/off power, & drive device number selector. Table to left (which is on wheels) holds secondary and tertiary systems. Black box over computers contains power switches for drives, 1541, FD-4000 & 1581; C64 & 128 do not need power switches since they can be reached easily. Drives serial line can be toggled between secondary (128) and tertiary (64) systems, via switch box on top of drives. All have front mounted device selection switches. Two printers are located behind cabinet doors under computers, the serial lines can be switched among all 3 systems. My three grandsons like to use these. At times they will all load the same game and have a contest. Interesting is that they have at their home the latest Compaq, all of the Nintendo series, Geminis, Sega, Game Boys and some other stuff, can't remember. I gave then one, the latest, Nintendo, a Gemini, a Sega and some other stuff, this is probably why I don't own a hard drive, etc. - They are worth it. Funny though, they prefer my Commodore setup.

Answer to this month's crossword

SCIENCE HUMOR

QUOTES FROM AN 11-YEAR-OLD'S SCIENCE EXAMS

"When you breath, you inspire. When you do not breath, you expire."

"H_2O is hot water, and CO_2 is cold water"

"To collect fumes of sulfur, hold a deacon over a flame in a test tube"

"When you smell an odorless gas, it is probably carbon monoxide"

"Nitrogen is not found in Ireland because it is not found in a free state"

"Water is composed of two gins, Oxygin and Hydrogin. Oxygin is pure gin. Hydrogin is gin and water."

"Three kinds of blood vessels are arteries, vanes and caterpillars."

"Blood flows down one leg and up the other."

"Respiration is composed of two acts, first inspiration, and then expectoration."

"The moon is a planet just like the earth, only it is even deader."

"Dew is formed on leaves when the sun shines down on them and makes them perspire."

"A super-saturated solution is one that holds more than it can hold."

"Mushrooms always grow in damp places and so they look like umbrellas."

"The body consists of three parts- the brainium, the borax and the abominable cavity. The brainium contains the brain, the borax contains the heart and lungs, and the abominable cavity contains the bowls, of which there are five - a, e, i, o, and u."

"The pistol of a flower is its only protection against insects."

"The alimentary canal is located in the northern part of Indiana."

"The skeleton is what is left after the insides have been taken out and the outsides have been taken off. The purpose of the skeleton is something to hitch meat to."

"A permanent set of teeth consists of eight canines, eight cuspids, two molars, and eight cuspidors."

"The tides are a fight between the Earth and moon. All water tends towards the moon, because there is no water in the moon, and nature abhors a vacuum. I forget where the sun joins in this fight."

"A fossil is an extinct animal. The older it is, the more extinct it is."

"Many women believe that an alcoholic binge will have no ill effects on the unborn fetus, but that is a large misconception."

"Equator: A managerie lion running around the Earth through Africa."

"Germinate: To become a naturalized German."

"Liter: A nest of young puppies."

"Magnet: Something you find crawling all over a dead cat."

"Momentum: What you give a person when they are going away."

"Planet: A body of Earth surrounded by sky."

"Rhubarb: A kind of celery gone bloodshot."

"Vacuum: A large, empty space where the pope lives."

"Before giving a blood transfusion, find out if the blood is affirmative or negative."

"To remove dust from the eye, pull the eye down over the nose."

"For a nosebleed: Put the nose much lower than the body until the heart stops."

"For drowning: Climb on top of the person and move up and down to make artificial perspiration."

"For fainting: Rub the person's chest or, if a lady, rub her arm above the hand instead. Or put the head between the knees of the nearest medical doctor."

"For dog bite: put the dog away for several days. If he has not recovered, then kill it."

"For asphyxiation: Apply artificial respiration until the patient is dead."

"For head cold: use an agonizer to spray the nose until it drops in your throat."

"To keep milk from turning sour: Keep it in the cow."

THE FEMALE RULES

- The female always makes the rules.
- The rules are subject to change at any time without prior notification.
- The female can change her mind at any given point of time.
- The male must never change his mind without expressed written consent from the female.
- The female is never wrong.
- If the female is wrong, it is because of a flagrant misunderstanding which was a direct result of something the male did or said wrong.
- If rule six (6) applies, the male must apologize immediately for causing the misunderstanding.
- The female has every right to be angry or upset at any time.
- The male must remain calm at all times, unless the female wants him to be angry or upset.
- Any attempt to document these rules could result in bodily harm.
- If the female has PMS, all rules are null and void.
- The male cannot, under any circumstances, diagnose PMS.

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